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10/698,365	11/03/2003	Martin Behr	14867-57 US (26090-047)	1138

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EXAMINER	
BENNETT, JENNIFER D	

ART UNIT	PAPER NUMBER
2878	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/698,365	BEHR ET AL.	
	Examiner	Art Unit	
	JENNIFER BENNETT	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 1, 3-7, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satake et al. (US 5917827) in view of Gochar, Jr. (US 6384421).

Re claims 1 and 19: Satake teaches an apparatus for analyzing batch samples of flowable objects (fig. 1): comprising: (a) an object feeder (26) having a metered bottom (39) opening which opens onto a metering belt (27) (col. 4, lines 20-24), the metered bottom opening being adjustable in accordance with the object size (col. 4, lines 26-28); (b) the metering belt having a textured upper surface to engage frictionally the objects flowing from the feeder (the cylinder 27, which can be replaced with a belt that has grooves); and (c) a conveyor (29) located below and close to the metering belt (27), the conveyor having at least one object presentation area for containing the objects (see fig. 2 and 3), each at least one object presentation area being associated with a radiation device (72) and a data capturing means (14) (when the grains pass point 83 an image is taken); wherein when a sample of objects is placed in the object feeder for analysis (fig. 1), the metered bottom opening is adjustable to provide a free flow of objects onto the metering belt (the selection done in the hopper would have to be dependent on the speed of the metering belt, so that the hopper does not become

clogged, col. 4, lines 26-28) and onto the conveyor and wherein the adjustment of the metered bottom opening is coordinated with the speeds of the metering belt and the conveyor such that a monolayer of objects of the sample to be analyzed is arranged in the at least one object presentation area and as the area moves towards the radiation device and the data capturing means (see fig. 2), the radiation source (72) and data capturing devices (14) associated with the at least one presentation area controlling activation of the radiation device and data capturing means to gather of data relating to the objects in the at least one object presentation area for analysis (see fig. 1 and, when the grains pass point 83 an image is taken). Satake also teaches obtaining a batch sample of the flowable objects to be analyzed (abstract), and depositing the flowable objects into an object analysis apparatus (see figure 1 and 2). Satake does not teach that each at least one object presentation area being associated with a triggering device for controlling operation of a radiation device and a data capturing means; the triggering device associated with the at least one presentation area controlling activation of the radiation device and data capturing means to gather of data relating to the objects in the at least one object presentation area for analysis. Gochar teaches a vision system for industrial parts (abstract, fig. 1), comprising: a conveyor belt (24 and 30 with 36) having at least one object presentation area for containing the objects (as seen in fig. 1the objects are separated from each other in individual regions), wherein each at least one object presentation area being associated with a triggering device (61) for controlling operation of a radiation device (50) and a data capturing means (46); the triggering device (61) associated with the at least one presentation area controlling activation of

the radiation device and data capturing means to gather of data relating to the objects in the at least one object presentation area for analysis (col. 6, lines 19-26). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the triggering mechanism in Gochar with the device for analyzing batch samples of Satake in order to have a device that can control the radiation source and detection device wasting less energy and to properly inspect each element with fewer errors.

Re claim 3: Satake as modified by Gochar teaches an apparatus as claimed in claim 1, wherein the data capturing means is selected from the group comprising a digital camera, an analog camera, an infrared detector, an acoustical detector, a laser detector, and an ultraviolet radiation detector (Satake, col. 2, lines 44-47).

Re claim 4: Satake as modified by Gochar teaches an apparatus as claimed in claim 1, wherein the apparatus includes a receptacle for receiving objects that have been subject to a data capturing event, the receptacle being selected from the group comprising a bin, a sealable container, a conveyor and a weigh scale (Satake, col. 2, lines 52-53).

Re claim 5: Satake as modified by Gochar teaches an apparatus as claimed in claim 1, wherein the data capturing means is connected to a computer programmed for storing and analyzing the captured data (Satake, fig. 8).

Re claim 6: Satake as modified by Gochar teaches an apparatus as claimed in claim 5, wherein the apparatus is constructed in a modular format, wherein at least one module is provided for containing the computer for storing and analyzing the captured data (Satake, col. 3, lines 24-32).

Re claim 7: Satake as modified by Gochar has been taught above. Satake does not teach an apparatus, wherein the apparatus is portable. To make the device portable is not patentably distinct over an old device (MPEP 2144.04(V)(A)). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device compact in size.

Re claim 20: Satake as modified by Gochar teaches a method as claimed in claim 19, wherein prior to the deposition of the flowable objects into the apparatus, a calibration process is performed (Satake, col. 8, lines 11-15), the calibration process comprising the steps of: insertion of a reference slide into an image viewing area opening located in the conveyor (Satake, 102 and 57, fig. 2, col. 9, lines 25-31); capturing an image of a grey color reference section of the reference slide (Satake, col. 8, lines 32-33); calculating a flat-field correction co-efficient to be applied to an image captured of the monolayer of objects arranged in the at least one object presentation area when the associated triggering device sets off the radiation device and data capturing means (Satake, col. 9, lines 24-34); capturing at least one image of an at least one color chart section of the reference slide (Satake, col. 8, lines 32-33); calculating a color correction co-efficient that is to be applied to the image captured of the monolayer of objects (Satake, col. 9, lines 24-34); and withdrawing the reference slide from the image viewing area opening (Satake, col. 9, lines 27-30).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satake et al. (US 5917827) as modified by Gochar, Jr. (US 6384421) as applied to claim 1 above, and further in view of Massen et al. (5379949).

Re claim 2: Satake as modified by Gochar teaches an object feeder (Satake, 26) having a metered bottom (Satake, 39) opening which opens onto a metering belt (Satake, 27) (col. 4, lines 20-24), the metered bottom opening being adjustable in accordance with the object size (Satake, col. 4, lines 26-28). Satake as modified by Gochar does not teach the hopper has a positionally-adjustable metering plate. Massen teaches an apparatus as claimed in claim 1 (fig. 8A), wherein the object feeder is a hopper (83 is the intake shaft of the hopper), the hopper is provided with a positionally-adjustable metering plate (84) within the hopper, the position of the metering plate being adjusted in accordance with the object size (col. 14, lines 53-56). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the hopper of Satake as modified by Gochar with the metering plate of Massen in order to control the output of the hopper.

4. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satake et al. (US 5917927, hereinafter Satake '927) as modified by Gochar, Jr. (US 6384421) as applied to claim 1 and 19 above, and further in view of Satake (US 4572666, hereinafter Satake '666).

Re claim 8: Satake '927 as modified by Gochar teaches least one object presentation area on the conveyor is defined by a plurality of equally-spaced parallel

transverse projections (see fig. 2 and 3). Satake '927 as modified by Gochar does not teach wherein the at least one object presentation area on the conveyor is defined by a plurality of equally-spaced parallel transverse projections located on a conveyor belt; the conveyor belt having a covering on its top and sides for containing the objects, and defining the other sides of the at least one object presentation area, the covering having an opening which permits unobstructed irradiation and data capture of the objects within the at least one object presentation area. Satake '666 teaches an apparatus as claimed in claim 1 (fig. 4), wherein the at least one object presentation area on the conveyor is defined by a plurality of equally-spaced parallel transverse projections (27) located on a conveyor belt (24); the conveyor belt having a covering on its top and sides for containing the objects (see fig. 4 the whole unit is contained by walls and a cover), and defining the other sides of the at least one object presentation area (not shown but since it is a container there would be side walls along the conveyor), the covering having an opening which permits unobstructed irradiation and data capture of the objects within the at least one object presentation area (see fig. 4, the opening is at the top where the light receiving elements 5, 6 are able to receive unobstructed light). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the conveying means of Satake '927 as modified by Gochar with the conveying belt and container of Satake '666 in order to maintain greater control over the individual grains.

Re claim 9: Satake '927 as modified by Gochar and Satake '666 teaches an apparatus as claimed in claim 8, the apparatus comprising continuous cleaning means

for removing objects and particulate material from the conveyor belt after a data capturing event (Satake '927, col. 6, lines 1-6).

Re claim 10: Satake '927 as modified by Gochar and Satake '666 teaches an apparatus as claimed in claim 9, wherein the cleaning means is a brush (Satake '927, col. 6, lines 6-11).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satake et al. (US 5917927, hereinafter Satake '927) as modified by Gochar, Jr. (US 6384421) and Satake (US 4572666, hereinafter Satake '666) as applied to claim 8 above, and further in view of Oste et al. (5898792).

Re claim 11: Satake '927 as modified by Gochar and Satake '666 teaches an apparatus as claimed in claim 8, wherein the conveyor belt has a color that is used in calibration (Satake '927, col. 8, lines 28-37). Satake '927 as modified by Gochar and Satake '666 does not teach wherein the conveyor belt has a color that provides a neutral background and a high contrast with the objects to be analyzed. Oste teaches wherein the conveyor belt has a color that provides a neutral background and a high contrast with the objects to be analyzed (col. 5, lines 21-22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the conveyor belt of Satake '927 as modified by Gochar and Satake '666 with the color of Oste so that when the image is taken one can decipher between the kernel/grain and the belt (Oste, col. 5, lines 15-22).

6. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Satake et al. (US 5917927, hereinafter Satake '927) as modified by Gochar, Jr. (US 6384421) and Satake (US 4572666, hereinafter Satake '666) and Oste et al. (5898792) as applied to claim 11 above, and further in view of Amonette et al. (US 2003/0090664).

Re claim 12: Satake '927 teaches a reflective surface on the conveyor means (col. 8, lines 31-32). Satake ('666) teaches of an opening above the conveyor allowing irradiation to enter the detectors (see fig. 4). Satake '927 as modified by Gochar and Satake ('666) and Oste do not teach wherein the circumference of the opening is coated with a material that reflects the radiation emanating from the radiation device into the object presentation area. Amonette teaches a coating that reflects the radiation emanating from the radiation device into the object presentation area (¶ 0091). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the hole area in Satake '927 as modified by Gochar and Satake ('666) and Oste so the light from the light source is directed toward the object being measured and that the irradiated light does not impede on sources and detectors used in the analysis.

Re claim 13: Satake '927 teaches a radiation source (71, fig. 1) with two light manifolds (78 and 79, fig. 2). Satake '927 does not teach the use of a radiation device comprising panels of light emitting diodes. Satake ('666) teaches the use of a radiation device that comprises of a light emitting diode (57, fig. 4). Satake ('666) does not teach using panels of light emitting diodes. It is well known in the art to have plural quantities of a component in a system (MPEP 2144.04(VI)(B)). It would have been obvious to combine the radiation source of Satake '927 with the light emitting diode of Satake

('666) in order to provide increased illumination and improve redundancy in case of the failure of a light emitting diode.

Re claim 14: Satake '927 as modified by Gochar and Satake ('666) and Oste teach the use of light emitting diodes (57) (Satake '666, fig. 4) and the use of flash illumination (Satake '927, col. 17, lines 2-5). Gochar teaches the light source strobes (col. 5, lines 9-15). Satake et al. as modified by Gochar and Satake '666 and Oste does that the light emitting diodes operate stroboscopically. Oste et al. teaches a similar apparatus with a stroboscope (col. 4, lines 56-59). It would have been obvious to use a stroboscope as taught by Oste et al. in the apparatus of Satake '927 as modified by Satake '666 and Amonette et al., to provide synchronized illumination for improved contrast and imaging clarity.

Re claim 15: Satake '927 teaches a means to calibrate the apparatus prior to the analysis of the batch sample (col. 8, lines 14-20).

Re claim 16: Satake '927 teaches the means to calibrate the apparatus is provided by a reference slide (102, fig. 2), the reference slide being inserted into the conveyor so as to be presented to the radiation device and the data capturing means (col. 9, lines 25-31).

Re claim 17: Satake '927 teaches the reference slide consists of at least two sections (102 and 57, fig. 2), the at least two sections consisting of a color reference chart section and a grey color section (col., 8, lines 32-37).

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Satake et al. (US 5917827) as modified by Gochar, Jr. (US 6384421) as applied to claim 1 above, and further in view of Lieber et al. (US 6629010).

Re claim 18: Satake as modified by Gochar teaches an apparatus (Satake, fig. 1), wherein the radiation device (13) and the data capturing means (14) are situated within an environment within the apparatus (11, positive air pressure environment). Satake as modified Gochar does not teach wherein the radiation device and the data capturing means are situated within a positive air pressure environment within the apparatus. Lieber teaches an apparatus (fig. 1), wherein the radiation device (6) and the data capturing means (7) are situated within a positive air pressure environment within the apparatus (8) (col. 3, lines 30-38). It would have been obvious to one of ordinary skill in the are at the time the invention was made to combine the environment of Satake as modified by Gochar with the positive air pressure of environment of Lieber so that dust and extra light cannot affect the measurements.

Response to Arguments

8. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER BENNETT whose telephone number is (571)270-3419. The examiner can normally be reached on Monday - Friday 0730 - 1700 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. B./

/Georgia Y Epps/

Supervisory Patent Examiner, Art Unit 2878